* =mandatory field)

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- **Dataset_Info**:*
  - Dataset_ID*: TAO170W_0N_Jul2007_Aug2008
  - **Submission_Dates**:*
    - Initial_Submission: 20101022 (YYYYMMDD)
    - Revised_Submission: 20130827 (YYYYMMDD)
- **Cruise_Info**:*
  - **Experiment**:
    - Experiment_Name*:
    - **Cruise**:**(-)**
      - Cruise_ID: (EXPOCODE)
      - Section: (Leg)
      - **Geographical_Coverage**:*
        - Geographical_Region:
        - **Bounds**:
          - Westernmost_Longitude:
            Enter decimal fractions of degrees:
            or Degrees, Minutes, Seconds:
          - Easternmost_Longitude:
            Enter decimal fractions of degrees: -170.09 (+ = E, - = W)
            or Degrees, Minutes, Seconds:
          - Northernmost_Latitude:
            Enter decimal fractions of degrees: -0.05 (+ = N, - = S)
          - Southernmost_Latitude:
            Enter decimal fractions of degrees:
      - **Temporal_Coverage**:
        - Start_Date: 20070731 (YYYYMMDD)
        - End_Date: 20080813 (YYYYMMDD)
  - **Vessel**:* Mooring platform
    - Vessel_Name:
    - Vessel_ID:
    - Country:
    - Vessel_Owner:
- **Variables_Info**:*
  - **Variable**:
    - Variable_Name and Description*:
- xCO_2 SW (wet) (umol/mol) - Mole fraction of CO_2 in air in equilibrium with the seawater at sea surface temperature and measured humidity.
- CO2 SW QF – Quality Flag for xCO_2 SW (wet).
- H_2O SW (mmol/mol) - Mole fraction of H_2O in air from equilibrator .
- xCO_2 Air (wet) (umol/mol) - Mole fraction of CO_2 in air from airblock, 4 feet above the sea surface at measured humidity.
- CO2 Air QF – Quality Flag for xCO_2 Air (wet)
- H_2O Air (mmol/mol) - Mole fraction of H_2O in air from airblock, 4 feet above the sea surface.

- Licor Atm Pressure (hPa) – Atmospheric pressure at the airblock, 4 feet above the sea surface
- Licor Temp (C) – Temperature of the Infrared Licor 820 in degrees Celsius
- % O_2 - The percent oxygen of the surface seawater divided by the percent oxygen of the atmosphere at 4 feet above the sea surface. Disclaimer: The oxygen measurement is made in the equilibrated air. We have found that the oxygen does not come to complete equilibrium so any rapid changes in oxygen do not get properly captured using this system. Therefore, we tend to use the oxygen data only as a qualitative sense of the biology. It is not a quantitative measure.
- SST (C) - Sea Surface Temperature collected by NOAA/PMEL/TAO provide internally recorded SST data at 10 minute resolution. The sea surface temperature collected during the equilibration period is reported in this dataset. NOAA/PMEL/TAO advises to check the TAO site at the time of use for the most accurate data available.
- Salinity - Sea Surface Salinity collected by NOAA/PMEL/TAO. Papa records conductivity data at 10 minute intervals and then computes hourly averaged salinity during post-processing. Daily data was only available at time of CO2 QC. NOAA/PMEL/TAO advises to check the TAO site at the time of use for the most accurate data available.
- xCO_2 SW (dry) (umol/mol) – Mole fraction of CO_2 in air in equilibrium with the seawater at sea surface temperature (dry air).
- xCO_2 Air (dry) (umol/mol) – Mole fraction of CO_2 in air at the airblock, 4 feet above the sea surface (dry air).
- fCO_2 SW (sat) uatm – Fugacity of CO_2 in air in equilibrium with the seawater at sea surface temperature (100% humidity). Since the measurements are taken at the sea surface, warming calculations are not necessary.
- fCO_2 Air (sat) uatm – Fugacity of CO_2 in air at the airblock, 4 feet above the sea surface (100% humidity).
- $dfCO_2$ – Difference of the fugacity of the CO_2 in seawater and the fugacity of the CO_2 in air (fCO_2 SW - fCO_2 Air).

- **Method_Description**:*
  - **Equilibrator_Design**:
    - Equilibrator_Type: (show pick list) Bubble Equilibrator
    - Equilibrator_Volume: (L) N/A
    - Water_Flow_Rate: (L/min) N/A
    - Headspace_Gas_Flow_Rate: (L/min) ~600 cc/min
    - Vented: (show pick list) Yes
  - Measurement_Method: Absolute, non-dispersive infrared (NDIR) gas analyzer
  - Manufacturer_of_Calibration_Gas: NOAA Earth System Research Laboratory (ESRL)
  - **CO_2_Sensors**:
    - **CO_2_Sensor**:
      - Manufacturer: Licor
      - Model: Environmental_Control: LI-820
      - Resolution: 0.01 ppm
      - Uncertainty: < 2.5% of reading with 14 cm bench (stated) <1.5 ppm determined in lab
      - CO_2_Sensor_Calibration: (For each calibration gas, document traceability to an internationally recognized scale, including date and place of last calibration. Include uncertainty of assigned value.)

        At the beginning of each sample, the instrument self-calibrates using a zero and high standard. The zero standard is generated by cycling a small amount of air through a soda lime chamber. The high standard is from a cylinder of calibrated standard reference gas, 500.35 umol/mol, from ESRL. ESRL

standards are traceable to WMO x93 scale with a stated reproducibility of 0.06 micromole/mole.

- **Other_Sensors**: Oxygen Sensor
  - Manufacturer: Maxtec
  - Model: Max-250
  - Resolution: 0.01 %
  - Uncert-ainty: ± 2.0% Full Scale over operating temperature range
    ± 1.0% Full Scale @ constant temperature and pressure
  - Calibration: (For each sensor of pressure, temperature, and salinity, document traceability to an internationally recognized scale, including date and place of last calibration.)
    Factory calibrated before purchase. Recalibrated to sea level atmospheric air every 7 days.

- **Other_Sensors**: Humidity Sensor
  - Manufacturer: Sensirion
  - Model: SHT71
  - Resolution: 0.01 %
  - Uncertainty: Measurement range: 0-100% RH
    Absolute. RH accuracy: +/- 3% RH (20-80% RH)
    Repeatability RH: +/- 0.1% RH
  - Calibration: (For each sensor of pressure, temperature, and salinity, document traceability to an internationally recognized scale, including date and place of last calibration.)
    Factory calibrated before purchase.

- Method_References: (Publication(s) describing method)

Sabine, C. (2005): High-resolution ocean and atmosphere pCO_2 time-series measurements. The State of the Ocean and the Ocean Observing System for Climate, Annual Report, Fiscal Year 2004, NOAA/OGP/Office of Climate Observation, Section 3.32a, 246–253.

- Additional Information

- All measurements are at sea surface temperature and atmospheric pressure.

- During the equilibration cycle, a closed loop of air equilibrates with seawater for 10 minutes. Once the equilibration period is complete, the pump stops and the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure. Measurements are recorded for 30 seconds at 2 hertz and then averaged.

- During the air cycle, fresh air is pumped through the detector for 1 minute. Once the pump stops, the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure. Measurements are recorded for 30 seconds at 2 hertz and then averaged.

- The gas streams for both the air cycle and equilibrator cycle are partially dried before entering the detector. The values listed as wet xCO_2 generally have relative humidity levels ranging from 40 to 80 percent. The humidity levels increase over the course of a deployment.

- Sampling occurs every 3 hours. The infrared detector is calibrated at the beginning of every sampling period. Averaged data and standard deviations for each measurement are transmitted back daily.

- To calculate the dry measurements, the water mole fraction in the Licor detector must be known. A relative humidity sensor is located immediately downstream of the detector.

- As part of the QC process, each data set is compared with the Marine Boundary Layer (MBL) data from GlobalView-CO_2. The CO2 air data from this deployment, Jul 2007 to Aug 2008, were -1.7 ± 1.5 umol/mol on average of the MBL data and therefore no correction was applied to the data.

GLOBALVIEW-CO_2: Cooperative Atmospheric Data Integration Project - Carbon Dioxide. CD-ROM, NOAA ESRL, Boulder, Colorado [Also available on Internet via anonymous FTP to ftp.cmdl.noaa.gov, Path: ccg/co2/GLOBALVIEW], 2010

- During the QC process, an adjustment to the Licor pressure is also made based on each sensor's bias to barometric pressure as measured in the lab. For this system, the Licor pressure was adjusted by +0.1 kPa

- On 29 November 2007, the calibration gas delivery pressure decreased by 50% which caused an immediate drop of 3 umol/mol in the CO2 data and over the course of the remaining deployment caused the detector to drift. In the lab, preliminary data returns suggested that the detector was reading 12 umol/mol low by the time it was recovered. The drift from 29 November 2007 to the end of the deployment was corrected during post-processing by lifting the data by 3 umol/mol plus the difference between the linear correlation of the drift after Nov 29 and the average of xCO2 air measurements before Nov 29 (376.62 umol/mol). xCO2 sw was then lifted the same amount as the air data. The correction for the last xCO2 air measurement of the deployment was 11.8 umol/mol, so the drift correction matched what was estimated in the lab when the system was recovered. The data that was corrected for drift also followed the seasonal pattern predicted by MBL data.

- No data = -9.999 or -999

- Data_set_References: (Publication(s) describing data set) None

- Citation: (How to cite this data set) Sutton, A., C. Sabine, and S. Maenner. 2008. High-resolution ocean and atmosphere pCO_2 time-series measurements from mooring TAO 0°, 170°W.

- **Data_Set_Link**:
  - URL*: http://www.pmel.noaa.gov/co2/moorings/eq_pco2/eq_pco2.htm
  - Label*:PMEL CO2 Group – TAO170W mooring
  - Link_Note: (Optional instructions or remarks)**(m s t)**

Quality Flags definitions:

2 = Acceptable measurement;
3 = Questionable measurement;
4 = Bad measurement
5 = Not reported;
9 = Sample not drown for this measurement from this bottle.

Quality Flag Log for this dataset.

Date	Measurement	Value (Dry)	Flag	Comments
9/10/2007 15:16	xCO2_SW	407.5653703	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
10/31/2007 12:16	xCO2_SW	524.6962526	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
10/31/2007 21:16	xCO2_SW	518.4523639	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/1/2007 0:16	xCO2_SW	512.467911	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

11/2/2007 0:16 xCO2_SW 521.4666476 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/20/2007 21:16 xCO2_SW 578.6961325 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 0:16 xCO2_SW 595.434615 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 3:16 xCO2_SW 592.5112618 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 6:16 xCO2_SW 593.6920216 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 9:16 xCO2_SW 579.8644828 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 12:16 xCO2_SW 575.2391852 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 15:16 xCO2_SW 563.3933226 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 18:16 xCO2_SW 548.8762196 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/21/2007 21:16 xCO2_SW 575.497518 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 0:16 xCO2_SW 571.6379174 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 3:16 xCO2_SW 581.6828243 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 6:16 xCO2_SW 561.4929817 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 9:16 xCO2_SW 563.4943578 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 12:16 xCO2_SW 562.9469222 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 15:16 xCO2_SW 543.2710807 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 18:16 xCO2_SW 544.9596287 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/22/2007 21:16 xCO2_SW 554.1837419 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 0:16 xCO2_SW 558.548919 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 3:16 xCO2_SW 567.5173257 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 6:16 xCO2_SW 564.2495239 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 9:16 xCO2_SW 547.6894151 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 12:16 xCO2_SW 541.1356455 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 15:16 xCO2_SW 551.3535521 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 18:16 xCO2_SW 542.605628 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/23/2007 21:16 xCO2_SW 555.1735271 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 0:16 xCO2_SW 551.9508926 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 3:16 xCO2_SW 574.3134717 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 6:16 xCO2_SW 561.5729883 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

11/24/2007 9:16	xCO2_SW	547.5373282	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 12:16	xCO2_SW	542.8654116	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 15:16	xCO2_SW	546.1102141	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 18:16	xCO2_SW	553.6341392	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/24/2007 21:16	xCO2_SW	561.8134654	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 0:16	xCO2_SW	564.3861673	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 3:16	xCO2_SW	571.5705421	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 6:16	xCO2_SW	582.9819964	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 9:16	xCO2_SW	568.7714359	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 12:16	xCO2_SW	572.1637842	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 15:16	xCO2_SW	560.6339225	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 18:16	xCO2_SW	567.6443085	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/25/2007 21:16	xCO2_SW	574.694042	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 0:16	xCO2_SW	566.6431201	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 3:16	xCO2_SW	571.2510223	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 6:16	xCO2_SW	560.7524739	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 9:16	xCO2_SW	553.631421	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 12:16	xCO2_SW	558.2812119	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 15:16	xCO2_SW	543.8461479	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 18:16	xCO2_SW	549.3100694	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/26/2007 21:16	xCO2_SW	561.9780093	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 0:16	xCO2_SW	559.4273821	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 3:16	xCO2_SW	564.2097991	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 6:16	xCO2_SW	557.4389674	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 9:16	xCO2_SW	548.3371849	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 12:16	xCO2_SW	537.7174214	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 15:16	xCO2_SW	540.7250237	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 18:16	xCO2_SW	539.7050674	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/27/2007 21:16	xCO2_SW	538.8027314	4	bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

11/28/2007 0:16 xCO2_SW 541.4643146 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 3:16 xCO2_SW 540.3380819 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 6:16 xCO2_SW 535.8207403 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 9:16 xCO2_SW 533.0582945 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 12:16 xCO2_SW 527.2258711 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 15:16 xCO2_SW 529.1791628 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 18:16 xCO2_SW 530.0323945 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/28/2007 21:16 xCO2_SW 541.6587741 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 0:16 xCO2_SW 548.8837723 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 3:16 xCO2_SW 552.7147598 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 6:16 xCO2_SW 545.7845348 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 9:16 xCO2_SW 543.9713446 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 12:16 xCO2_SW 477.2913991 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 15:16 xCO2_SW 485.8497627 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 18:16 xCO2_SW 543.9925963 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/29/2007 21:16 xCO2_SW 553.3796885 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 0:16 xCO2_SW 587.9458453 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 3:16 xCO2_SW 567.761877 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 6:16 xCO2_SW 560.4201712 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 9:16 xCO2_SW 549.1663467 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 12:16 xCO2_SW 557.2646496 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 15:16 xCO2_SW 551.7616533 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 18:16 xCO2_SW 537.6286446 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
11/30/2007 21:16 xCO2_SW 541.9906723 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 0:16 xCO2_SW 555.9799622 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 3:16 xCO2_SW 541.7810078 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 6:16 xCO2_SW 531.156972 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 9:16 xCO2_SW 531.9695142 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 12:16 xCO2_SW 518.5567767 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

12/1/2007 15:16 xCO2_SW 528.4653927 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 18:16 xCO2_SW 525.5993534 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/1/2007 21:16 xCO2_SW 524.2356645 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/2/2007 0:16 xCO2_SW 542.1096751 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/2/2007 3:16 xCO2_SW 545.0101331 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/2/2007 6:16 xCO2_SW 531.7451592 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/2/2007 9:16 xCO2_SW 508.7481427 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/8/2007 18:16 xCO2_SW 513.3229921 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/8/2007 21:16 xCO2_SW 517.039621 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater and CO2 data submitted was adjusted by - 3 ppm due to offset in span calibration
12/8/2007 21:16 xCO2_Air 381.4534195 3 CO2 data submitted was adjusted by - 3 ppm due to offset in span calibration
12/9/2007 0:16 xCO2_SW 544.9413657 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/9/2007 3:16 xCO2_SW 529.8621046 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/9/2007 6:16 xCO2_SW 520.3220042 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/9/2007 9:16 xCO2_SW 529.2027016 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/9/2007 12:16 xCO2_SW 519.4809706 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/13/2007 3:16 xCO2_SW 520.0813355 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/14/2007 6:16 xCO2_SW 524.178363 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/19/2007 6:16 xCO2_SW 521.1752436 4 bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 0:16 xCO2_SW 503.3288597 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 3:16 xCO2_SW 502.4325543 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 6:16 xCO2_SW 491.7843782 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 9:16 xCO2_SW 512.1564599 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 12:16 xCO2_SW 496.3482681 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 15:16 xCO2_SW 492.1518221 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 18:16 xCO2_SW 500.5889636 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/25/2007 21:16 xCO2_SW 502.3441648 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 0:16 xCO2_SW 515.4121745 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 3:16 xCO2_SW 501.5868374 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

12/26/2007 6:16 xCO2_SW 494.8536454 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 9:16 xCO2_SW 510.103744 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 12:16 xCO2_SW 517.6550179 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 15:16 xCO2_SW 502.6372582 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 18:16 xCO2_SW 487.3134833 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/26/2007 21:16 xCO2_SW 506.8616688 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 0:16 xCO2_SW 534.2178519 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 3:16 xCO2_SW 520.875451 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 6:16 xCO2_SW 492.4306813 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 9:16 xCO2_SW 492.9538489 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 12:16 xCO2_SW 521.5468063 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 15:16 xCO2_SW 503.8508297 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 18:16 xCO2_SW 502.6080482 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/27/2007 21:16 xCO2_SW 506.5708078 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 0:16 xCO2_SW 526.2283596 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 3:16 xCO2_SW 529.3024713 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 6:16 xCO2_SW 494.2756813 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 9:16 xCO2_SW 481.4126273 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 12:16 xCO2_SW 482.1909856 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 15:16 xCO2_SW 507.946445 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 18:16 xCO2_SW 511.1248729 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/28/2007 21:16 xCO2_SW 499.520492 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 0:16 xCO2_SW 487.9379003 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 3:16 xCO2_SW 507.6308167 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 6:16 xCO2_SW 491.1590272 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 9:16 xCO2_SW 481.5435369 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 12:16 xCO2_SW 485.5850105 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 15:16 xCO2_SW 489.5940269 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/29/2007 18:16 xCO2_SW 490.0130766 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

12/29/2007 21:16 xCO2_SW 494.7386586 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 0:16 xCO2_SW 516.7566722 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 3:16 xCO2_SW 530.9174759 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 6:16 xCO2_SW 515.7851639 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 9:16 xCO2_SW 488.3693899 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 12:16 xCO2_SW 486.8430641 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 15:16 xCO2_SW 495.5096367 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 18:16 xCO2_SW 492.1652229 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/30/2007 21:16 xCO2_SW 495.0811079 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 0:16 xCO2_SW 496.9583208 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 3:16 xCO2_SW 514.7297826 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 6:16 xCO2_SW 495.1554432 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 9:16 xCO2_SW 488.5509721 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 12:16 xCO2_SW 485.3298333 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 15:16 xCO2_SW 489.580279 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 18:16 xCO2_SW 490.0518173 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
12/31/2007 21:16 xCO2_SW 495.4635701 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 0:16 xCO2_SW 501.3798542 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 3:16 xCO2_SW 495.8413004 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 6:16 xCO2_SW 487.680309 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 9:16 xCO2_SW 488.3601965 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 12:16 xCO2_SW 494.250358 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 15:16 xCO2_SW 513.9735624 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 18:16 xCO2_SW 491.9713056 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/1/2008 21:16 xCO2_SW 547.8957545 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 0:16 xCO2_SW 533.9130758 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 3:16 xCO2_SW 501.7418595 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 6:16 xCO2_SW 503.4390699 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 9:16 xCO2_SW 500.8808478 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

1/2/2008 12:16 xCO2_SW 502.403915 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 15:16 xCO2_SW 493.0427743 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 18:16 xCO2_SW 523.2878442 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/2/2008 21:16 xCO2_SW 499.1981274 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 0:16 xCO2_SW 531.7686159 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 3:16 xCO2_SW 518.6807436 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 6:16 xCO2_SW 506.2900678 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 9:16 xCO2_SW 513.5127575 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 12:16 xCO2_SW 513.0858764 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 15:16 xCO2_SW 519.1861339 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 18:16 xCO2_SW 512.1135654 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/3/2008 21:16 xCO2_SW 529.2406722 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 0:16 xCO2_SW 521.2175262 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 3:16 xCO2_SW 524.3923384 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 6:16 xCO2_SW 527.7981235 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 9:16 xCO2_SW 522.0991949 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 12:16 xCO2_SW 522.0241888 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 15:16 xCO2_SW 523.1742468 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 18:16 xCO2_SW 527.6002347 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/4/2008 21:16 xCO2_SW 530.8128268 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 0:16 xCO2_SW 527.8902816 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 3:16 xCO2_SW 532.1737162 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 6:16 xCO2_SW 523.5599669 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 9:16 xCO2_SW 535.3021775 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 12:16 xCO2_SW 535.6302512 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 15:16 xCO2_SW 518.6084254 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 18:16 xCO2_SW 533.6080666 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/5/2008 21:16 xCO2_SW 527.0637935 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 0:16 xCO2_SW 538.3108112 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

1/6/2008 3:16 xCO2_SW 545.023743 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 6:16 xCO2_SW 541.4421521 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 9:16 xCO2_SW 534.7049898 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 12:16 xCO2_SW 532.4740417 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 15:16 xCO2_SW 526.4543303 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 18:16 xCO2_SW 532.161367 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/6/2008 21:16 xCO2_SW 533.5890216 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 0:16 xCO2_SW 532.0750108 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 3:16 xCO2_SW 531.4127713 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 6:16 xCO2_SW 524.2946564 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 9:16 xCO2_SW 524.2944037 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 12:16 xCO2_SW 521.7364014 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 15:16 xCO2_SW 521.5247746 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 18:16 xCO2_SW 523.4142085 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/7/2008 21:16 xCO2_SW 528.7783153 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 0:16 xCO2_SW 523.829176 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 3:16 xCO2_SW 518.6674282 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 6:16 xCO2_SW 516.4040512 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 9:16 xCO2_SW 519.0992901 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 12:16 xCO2_SW 516.8524809 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 15:16 xCO2_SW 513.58751 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 18:16 xCO2_SW 509.8205791 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/8/2008 21:16 xCO2_SW 512.4259508 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 0:16 xCO2_SW 511.2661536 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 3:16 xCO2_SW 506.2288095 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater and CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
1/9/2008 3:16 xCO2_Air 381.4186647 3 CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
1/9/2008 6:16 xCO2_SW 506.8786346 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 9:16 xCO2_SW 505.6598711 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

1/9/2008 12:16 xCO2_SW 505.9759975 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 15:16 xCO2_SW 506.8826617 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 18:16 xCO2_SW 503.8030744 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/9/2008 21:16 xCO2_SW 504.7378416 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 0:16 xCO2_SW 501.9080722 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 3:16 xCO2_SW 498.9287452 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 6:16 xCO2_SW 499.2150281 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 9:16 xCO2_SW 504.059214 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 12:16 xCO2_SW 504.8132369 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 15:16 xCO2_SW 505.5101111 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 18:16 xCO2_SW 505.7337623 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/10/2008 21:16 xCO2_SW 504.3982675 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 0:16 xCO2_SW 501.2477566 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 3:16 xCO2_SW 500.2814221 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 6:16 xCO2_SW 500.2228498 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 9:16 xCO2_SW 501.8515372 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 12:16 xCO2_SW 502.7627255 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 15:16 xCO2_SW 502.4590546 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 18:16 xCO2_SW 503.3160505 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/11/2008 21:16 xCO2_SW 502.1882993 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 0:16 xCO2_SW 509.4923431 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 3:16 xCO2_SW 513.1600324 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 6:16 xCO2_SW 512.86048 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 9:16 xCO2_SW 512.2716477 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 12:16 xCO2_SW 509.5561568 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 15:16 xCO2_SW 513.3329608 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 18:16 xCO2_SW 516.2303038 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/12/2008 21:16 xCO2_SW 517.0979996 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 0:16 xCO2_SW 521.9280631 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

1/13/2008 3:16 xCO2_SW 519.9199324 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 6:16 xCO2_SW 524.8101931 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater and CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
1/13/2008 6:16 xCO2_Air 383.9200439 3 CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
1/13/2008 9:16 xCO2_SW 521.3859694 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 12:16 xCO2_SW 522.9276563 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 15:16 xCO2_SW 521.3811014 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 18:16 xCO2_SW 523.5482516 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/13/2008 21:16 xCO2_SW 526.3746577 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 0:16 xCO2_SW 526.4303774 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 3:16 xCO2_SW 526.8626438 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 6:16 xCO2_SW 512.616246 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 9:16 xCO2_SW 501.7647489 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 12:16 xCO2_SW 521.9604286 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 15:16 xCO2_SW 501.3925931 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 18:16 xCO2_SW 503.2711218 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/14/2008 21:16 xCO2_SW 520.363085 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 0:16 xCO2_SW 504.0289358 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 3:16 xCO2_SW 505.894554 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 6:16 xCO2_SW 521.148012 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 9:16 xCO2_SW 496.4365463 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 12:16 xCO2_SW 497.7726337 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 15:16 xCO2_SW 501.9385546 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 18:16 xCO2_SW 501.5529953 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/15/2008 21:16 xCO2_SW 499.6446679 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 0:16 xCO2_SW 503.7282894 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 3:16 xCO2_SW 537.1504847 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 6:16 xCO2_SW 524.6154039 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 9:16 xCO2_SW 526.9104019 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

1/16/2008 12:16	xCO2_SW	533.5705995	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 15:16	xCO2_SW	528.1422977	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 18:16	xCO2_SW	528.4059675	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/16/2008 21:16	xCO2_SW	526.9184667	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 0:16	xCO2_SW	528.2188739	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 3:16	xCO2_SW	511.4634951	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 6:16	xCO2_SW	505.8723967	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 9:16	xCO2_SW	517.5692822	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 12:16	xCO2_SW	504.4405935	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 15:16	xCO2_SW	508.6709133	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 18:16	xCO2_SW	504.4946095	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/17/2008 21:16	xCO2_SW	509.2346422	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 0:16	xCO2_SW	515.6477631	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 3:16	xCO2_SW	520.7585254	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 6:16	xCO2_SW	507.2307833	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 9:16	xCO2_SW	502.1832723	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 12:16	xCO2_SW	507.2721586	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 15:16	xCO2_SW	505.4583178	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 18:16	xCO2_SW	503.0860622	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/18/2008 21:16	xCO2_SW	502.2004314	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/19/2008 0:16	xCO2_SW	519.5540013	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/19/2008 3:16	xCO2_SW	524.0013533	3	likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
1/21/2008 9:16	xCO2_SW	503.8224909	3	CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
1/21/2008 9:16	xCO2_Air	382.7590498	3	CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
1/23/2008 12:16	xCO2_SW	519.3738983	3	CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
1/23/2008 12:16	xCO2_Air	382.3703218	3	CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
2/1/2008 6:16	xCO2_SW	487.9167705	3	CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
2/1/2008 6:16	xCO2_Air	381.6008518	3	CO2 data submitted was adjusted by + 2 ppm due to offset in span calibration
2/3/2008 6:16	xCO2_SW	546.6166037	3	60 ppm increase in CO2 sw over one cycle but no clues that data is bad in diagnostics

2/7/2008 3:16 xCO2_SW 503.0316306 3 CO2 data submitted was adjusted by + 3 ppm due to offset in span calibration
2/7/2008 3:16 xCO2_Air 383.0996371 3 CO2 data submitted was adjusted by + 3 ppm due to offset in span calibration
2/11/2008 0:16 xCO2_SW 534.5161856 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 3:16 xCO2_SW 535.0303312 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 6:16 xCO2_SW 512.3009989 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 9:16 xCO2_SW 497.7600545 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 12:16 xCO2_SW 494.6757081 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 15:16 xCO2_SW 499.5256466 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 18:16 xCO2_SW 497.2861577 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/11/2008 21:16 xCO2_SW 506.7447864 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 0:16 xCO2_SW 523.0111068 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 3:16 xCO2_SW 544.4182337 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 6:16 xCO2_SW 502.0337642 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 9:16 xCO2_SW 497.6374072 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 12:16 xCO2_SW 492.6964325 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 15:16 xCO2_SW 494.5259927 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 18:16 xCO2_SW 495.692168 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/12/2008 21:16 xCO2_SW 498.2930706 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 0:16 xCO2_SW 508.6978237 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater and CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
2/13/2008 0:16 xCO2_Air 384.4866142 3 CO2 data submitted was adjusted by - 2 ppm due to offset in span calibration
2/13/2008 3:16 xCO2_SW 507.4567951 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 6:16 xCO2_SW 503.3792673 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 9:16 xCO2_SW 490.8146068 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 12:16 xCO2_SW 494.4630979 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 15:16 xCO2_SW 497.0284425 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 18:16 xCO2_SW 495.2613426 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/13/2008 21:16 xCO2_SW 498.7323161 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/14/2008 0:16 xCO2_SW 521.6784511 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

2/14/2008 3:16 xCO2_SW 515.0785666 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 3:16 xCO2_SW 539.4119444 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 6:16 xCO2_SW 525.45202 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 9:16 xCO2_SW 531.068102 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 12:16 xCO2_SW 494.2865624 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 15:16 xCO2_SW 494.3975732 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 18:16 xCO2_SW 508.3227132 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/17/2008 21:16 xCO2_SW 510.8778684 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 0:16 xCO2_SW 502.0662692 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 3:16 xCO2_SW 502.983618 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 6:16 xCO2_SW 504.8162741 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 9:16 xCO2_SW 526.5298209 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 12:16 xCO2_SW 493.1445691 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 15:16 xCO2_SW 492.8132911 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 18:16 xCO2_SW 495.9169664 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/18/2008 21:16 xCO2_SW 499.7629657 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 0:16 xCO2_SW 501.9606081 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 3:16 xCO2_SW 522.3373245 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 6:16 xCO2_SW 525.06142 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 9:16 xCO2_SW 528.9472371 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 12:16 xCO2_SW 515.8606177 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 15:16 xCO2_SW 524.3473091 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 18:16 xCO2_SW 517.2982389 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/19/2008 21:16 xCO2_SW 501.1826738 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 0:16 xCO2_SW 531.1927315 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 3:16 xCO2_SW 526.5254658 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 6:16 xCO2_SW 524.9762057 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 9:16 xCO2_SW 524.5491893 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 12:16 xCO2_SW 518.9197575 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater

2/20/2008 15:16 xCO2_SW 498.8609208 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 18:16 xCO2_SW 509.4763629 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/20/2008 21:16 xCO2_SW 516.1520406 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 0:16 xCO2_SW 534.6674969 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 3:16 xCO2_SW 532.952827 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 6:16 xCO2_SW 506.9114913 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 9:16 xCO2_SW 510.8296369 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 12:16 xCO2_SW 500.8205013 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 15:16 xCO2_SW 498.9052047 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 18:16 xCO2_SW 498.9704268 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/21/2008 21:16 xCO2_SW 501.4130541 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/22/2008 0:16 xCO2_SW 518.9105322 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
2/22/2008 3:16 xCO2_SW 517.3151571 3 likely bad measurement due to change in equil pump pressure - buoy pressure readings at 300 and 500m indicate it may have been tugged or underwater
6/8/2008 12:16 xCO2_SW 472.0640836 3 CO2 data submitted was adjusted by + 5 ppm due to offset in span calibration
6/8/2008 12:16 xCO2_Air 383.8827425 3 CO2 data submitted was adjusted by + 5 ppm due to offset in span calibration
6/9/2008 12:16 xCO2_SW 476.1266981 3 CO2 data submitted was adjusted by - 5 ppm due to offset in span calibration
6/9/2008 12:16 xCO2_Air 382.1753969 3 CO2 data submitted was adjusted by - 5 ppm due to offset in span calibration
6/13/2008 12:16 xCO2_SW 476.6632838 3 CO2 data submitted was adjusted by + 5 ppm due to offset in span calibration
6/13/2008 12:16 xCO2_Air 382.072142 3 CO2 data submitted was adjusted by + 5 ppm due to offset in span calibration